

**REBUTTAL TESTIMONY OF
SCOTT A. ROBINSON
ON BEHALF OF
DOMINION ENERGY SOUTH CAROLINA, INC.
DOCKET NO. 2020-229-E**

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND**
2 **OCCUPATION.**

3 A. My name is Scott Austen Robinson. I am an Associate Director in the
4 Advanced Solutions group at Guidehouse, formerly Navigant Consulting, Inc. My
5 business address is 1375 Walnut Street, Boulder, Colorado. I am testifying on behalf
6 of Dominion Energy South Carolina, Inc. (“DESC”).

7
8 **Q. ARE YOU THE SAME SCOTT ROBINSON WHO PREVIOUSLY**
9 **SUBMITTED DIRECT TESTIMONY IN THIS DOCKET?**

10 A. Yes, I am.

11
12 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

13 A. The purpose of my rebuttal testimony is to respond to claims made by
14 Witnesses Barnes, Beach, and Zimmerman related to Solar PV customer economics
15 and customer adoption of Solar PV under the net energy metering (“NEM”) tariffs
16 proposed by DESC in this docket (the “Solar Choice Tariffs”). I also update the
17 customer economic forecasts that I presented in my direct testimony to account for

1 recent federal policy changes. Finally, I refute Witness Barnes' claims regarding
2 alleged deficiencies in my previously submitted analysis, and I demonstrate that the
3 Solar Choice Tariffs provide the opportunity for return on investment for
4 Residential Single Family and Small Commercial sectors for all cost and system
5 size scenarios.

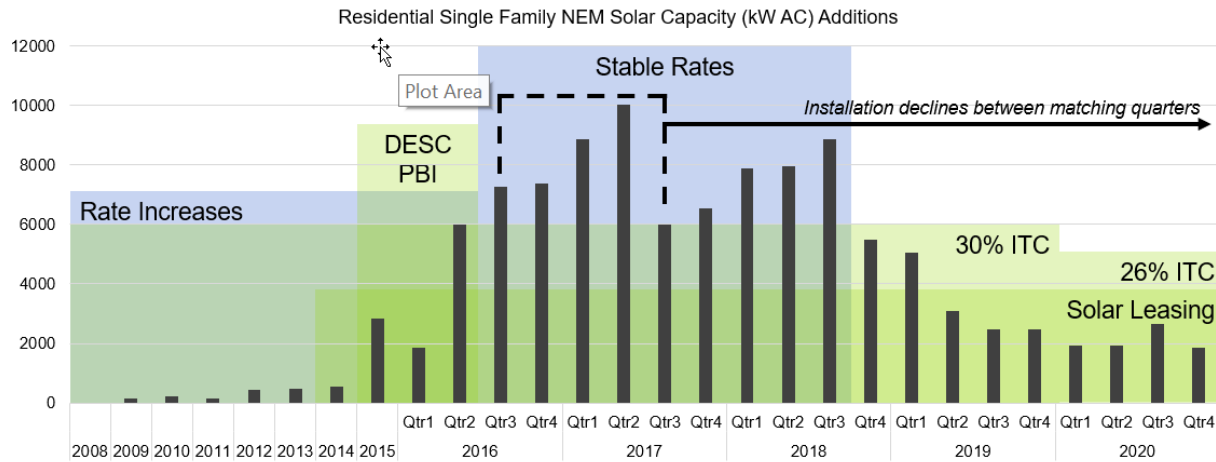
6
7 **Q. ARE THERE ANY CHANGES THAT YOU HAVE MADE TO THE**
8 **SCENARIOS YOU PRESENTED IN YOUR DIRECT TESTIMONY?**

9 A. Yes. I have changed the "Mid-Cost" scenario to reflect the two-year
10 extension of the Federal Investment Tax Credit (ITC) at 26% passed in December
11 2020. The results of my economic modeling also include three system size
12 scenarios: "Size 1" – 3 kW DC for Residential Single Family, and 12.5 kW DC for
13 Small Commercial, "Size 2" – 6kW DC for Residential Single Family, and 14 kW
14 DC for Small Commercial, and "Size 3" – 7.2 kW DC for Residential Single Family,
15 and 16.5 kW DC for Small Commercial. Wherever I reference "Mid-Cost" in my
16 rebuttal testimony, I am referencing these updated forecasts and figures.

17
18 **REBUTTAL TO WITNESS BARNES**

19 **Q. ON PAGE 57, LINE 19, THROUGH PAGE 58, LINE 19, WITNESS BARNES**
20 **CITES SEVERAL REASONS WHY SOLAR INSTALLATIONS HAVE**
21 **SLOWED IN RECENT YEARS. DO YOU AGREE WITH HIS**
22 **REASONING?**

1 A. I do not. Although I do agree that installations have slowed, Witness Barnes
2 mischaracterizes the underlying reasons for this trend by suggesting that declining
3 installation rates for residential customers are due to rate decreases. This is
4 speculation and is not supported by any data or analysis presented in this docket.
5 Contrary to Witness Barnes' assertion, solar PV capacity additions slowed well
6 before the rate declines. The economics of solar PV in DESC's service territory are
7 complex and have been driven by a layered policy and price environment. Witness
8 Barnes is proposing a conclusion based on superficial observations; however, an
9 appropriate interpretation of the data reveals that adoption in DESC's service
10 territory began slowing in Q3 of 2017 due to market maturity. Solar PV displays
11 seasonal adoption patterns. When comparing installation rates year-over-year, it is
12 important to look at each quarter independently. For example, installations in Q3 of
13 2016 should be compared against installations in Q3 of 2017. This controls for
14 seasonal variation. Below I describe in detail the dynamics behind this decline,
15 which is illustrated in Figure 1. In the figure, the bars reflect residential installed
16 capacity on a quarterly basis. Early years have been aggregated due to low growth.
17 Each colored block illustrates the timing of different market drivers.

Figure 1. DESC Residential Solar PV NEM Adoption Dynamics

In 2014, the combination of declining solar PV prices, availability of the South Carolina state tax credit, availability of the federal ITC, and introduction of solar leasing via Act 236 created the opportunity for economic adoption of solar PV for a large portion of customers. Essentially, the pool of potential adopters (the long-run equilibrium market share) became much larger than the pool of existing adopters. The introduction of the NEM Performance Based Incentive (PBI) further increased the long-run market share and provided a strong catalyst to the market, increasing awareness and interest in solar PV. Rapid adoption in 2016 and early 2017 closed the gap between the cumulative adopter population and the long-run market share, resulting in installations beginning to drop between matching quarters starting in Q3 2017. To emphasize this point, incremental solar PV capacity additions contracted before rates decreased and before the ITC sunset to 26% in 2020. This is clearly shown in Figure 1.

Rates increased consistently from May 2008 through July 2016. Mandated 15% rate cuts went into effect in August 2018. It is possible that this enabled solar PV installers to offer lease terms with high escalation terms, banking on customers' anticipation of increasing rates. However, Witness Barnes' speculation on page 58, lines 7-14—that rapid adoption is driven exclusively by periods of increasing rates, and that decreased adoption is driven exclusively by declining rates—is inconsistent with the facts. For the majority of time during which the rate increases mentioned by Witness Barnes were taking place, marginal yearly residential capacity additions in DESC territory were below 500 kW AC. As I have already shown, solar installations slowed well before rate declines in Q3 2018. Thus, neither the slowing solar PV market in Q3 2017 nor the rising solar PV market in 2015 is explained by Witness Barnes' narrative. As such, the Solar Choice Tariffs are the improper forum via which to remedy Witness Barnes' alleged market deficiencies given that the primary drivers of this decreased adoption are externalities outside the control of DESC. Rather, the Solar Choice Tariffs should be designed to fulfill the spirit of Act 62 by providing the opportunity for market-driven growth, while eliminating cost-shift to the greatest extent practicable.

Q. WHAT ARE THE ALLEGED DEFICIENCIES IN YOUR FORECAST THAT WITNESS BARNES SUGGESTS ON PAGE 70, LINES 7 THROUGH 21?

A. Witness Barnes claims to have identified five alleged deficiencies:

- Insufficient “Load coverage ratios;”

- Differences in assumptions between my modeling and that done by Witness Everett;
- System price estimates are lower than national LBNL survey data;
- Economies of scale in solar PV prices; and
- An “Unlikely” increase in the Federal ITC in the “Low Cost” scenario.

None of these claims are material, and seem to be due to either fundamental misunderstandings, or a lack of access to data. Witness Barnes claims that these together render the calculations “highly misleading and inaccurate,” which is disingenuous. I address each of his claims below.

Q. PLEASE EXPLAIN “LOAD COVERAGE RATIOS” AND HOW THEY RELATE TO YOUR ANALYSIS.

A. This is a metric that describes the total energy output of the system—typically, over the course of a year—divided by the customer’s gross energy consumption. A ratio of one means that the energy output of the system equals the customer’s gross energy consumption. Thus, any exported energy in excess of actual on-site consumption drives up the numerator, and makes the ratio larger. This metric is an accurate way to size the system if the customer has adequate battery storage to allow the excess energy to be used by the customer to offset energy consumption at a later date. They are also used when full retail NEM incentives are in place because the customer is compensated at retail rates for generation. Holding all other factors constant, higher load coverage ratios mean a smaller percentage of generation that

1 is consumed on site. Thus, absent coupled battery storage, a larger load coverage
2 ratio signifies a higher potential to shift costs to non-participating NEM customers.

3
4 **Q. IS WITNESS BARNES' TESTIMONY REGARDING INCREASED "LOAD**
5 **COVERAGE RATIOS" ON PAGE 66, LINE 20, THROUGH PAGE 67, LINE**
6 **3, CONSISTENT WITH REQUIREMENTS OF ACT 62?**

7 A. No, it is not. S.C. Code Ann. § 58-40-20(G) requires that Solar Choice Tariffs
8 "eliminate any cost shift to the greatest extent practicable" while permitting "solar
9 choice customer-generators to use customer-generated energy behind the meter
10 without penalty." Holding all other factors constant, lower load coverage ratios are
11 more consistent with Act 62 since they decrease exports—which must be purchased
12 by DESC, thus increasing the potential for cost shift—while also increasing the
13 percentage of the solar PV system's energy production that is consumed behind the
14 meter. This means sizing systems to closer match the customers peak load than their
15 total energy consumption. The more appropriate numerator for optimal system
16 sizing in accordance with Act 62 should be the system's capacity in kW, and the
17 denominator should be the customer's daytime peak kW. This simple change
18 provides a better ratio that maximizes a customer's behind the meter usage of
19 customer-generated energy and reduces exports that can shift costs to non-
20 participating customers, providing a more comprehensive picture of how such
21 program fares relative to the policies outlined in Act 62.

1 **Q. HOW DO YOU RESPOND TO WITNESS BARNES' STATEMENT ON**
2 **PAGE 64, LINE 7, OF HIS DIRECT TESTIMONY THAT THERE IS A**
3 **"CLEAR INCONGRUITY" BETWEEN YOUR ECONOMIC ANALYSIS**
4 **AND WITNESS EVERETT'S BILL SAVINGS ESTIMATES?**

5 A. The differences in analyses are intentional and reflect best-practices. For
6 example, Witness Everett used current DESC NEM customer generation and
7 consumption profiles in her analysis, which is typical of the historical data most
8 commonly used in rate design. I used average customer consumption profiles by
9 sector and rate class and generation profiles from NREL's System Advisor Model,
10 which utilized default configurations, weighted average azimuth, and typical
11 meteorological year weather data from Columbia, South Carolina. This was noted
12 in my direct testimony in Docket No. 2019-182-E.

13 Using average customer data is more appropriate for long-run forecasts
14 because—holding all other factors constant—it provides a more accurate picture of
15 customer characteristics going forward as opposed to the historical data utilized by
16 Witness Everett.

17
18 **Q. DO YOU AGREE WITH WITNESS BARNES' CLAIM THAT YOUR**
19 **INSTALLED COST ASSUMPTIONS ARE "UNREALISTICALLY LOW?"**

20 A. No. Witness Barnes' testimony relies only on the public LBNL data
21 published in their Tracking the Sun Distributed Solar 2020 Data Update Report
22 (LBNL Tracking the Sun). In my experience, these data are notoriously low-quality

1 and not suitable for forecasting. In fact, Guidehouse does not rely on these price
2 data since the LBNL prices are (i) based on self-report data, (ii) systematically
3 biased due to omissions, and (iii) not intended for forecasting. As I show below,
4 these issues are clearly acknowledged by the authors of the LBNL Tracking the Sun
5 Report. Finally, on page 72 of his direct testimony Witness Barnes suggests that I
6 am claiming solar PV prices will drastically decline over time. He appears to reach
7 this conclusion by taking the 2019 data point from LBNL, and the 2020 data point
8 from my study and estimates. This whole line of argument appears to be due to his
9 misunderstanding that I am using 2019 LBNL data and forecasting forward. This is
10 incorrect and should be ignored. The LBNL Tracking the Sun Distributed Solar
11 2020 Data Update Report data was not used as the basis for my cost modeling.

12
13 **Q. CAN YOU ELABORATE ON WHY THE LBNL PRICE DATA SHOULD**
14 **NOT BE USED FOR FORECASTING?**

15 A. Guidehouse is appreciative of the difficulty collecting national survey data
16 at the scale done by LBNL, but the LBNL data is systematically biased—as the
17 report authors caution. Guidehouse has two primary issues with the data underlying
18 the analysis and any conclusions derived therefrom because, as LBNL clearly states
19 in their report, their analysis excludes third-party owned systems, battery-coupled
20 systems, and self-installed systems.¹ The report authors also note that the data are

¹ https://emp.lbl.gov/sites/default/files/distributed_solar_2020_data_update.pdf

1 self-reported and can be subject to inconsistencies. Finally, the data are historical
2 and not indicative of recent system quotes or prices.²

3 Additionally, the self-report survey data is gathered from solar PV incentive
4 programs. The overall median prices are not representative of any given jurisdiction
5 because the incentives themselves can drive value-based pricing by installers.
6 Likely because of these reasons, the LBNL report is not consistent with the other
7 common industry data sources, including the National Renewable Energy
8 Laboratory (NREL), the Solar Energy Industry Association (SEIA), and GreenTech
9 Media (GTM).

10
11 **Q. PLEASE DESCRIBE THE DATA SOURCES UTILIZED IN YOUR**
12 **FORECAST.**

13 A. Rather than taking forecast data whole-cloth from third party sources, such
14 as LBNL, Guidehouse develops independent bottom-up component level price
15 forecasts, using a synthesis of regularly compiled sources for benchmarking.
16 Among these are SEIA's Quarterly Solar Market Insight Reports,³ NREL Quarterly
17 Solar Industry Update,⁴ web scraping of solar installer pricing,⁵ and Energy Sage
18 Annual Market Reports.⁶ The price forecast was described in my direct testimony

³ Example: <https://www.seia.org/research-resources/solar-market-insight-report-2020-q4>

⁴ Example: <https://www.nrel.gov/solar/solar-installed-system-cost.html> and
<https://www.nrel.gov/docs/fy20osti/77010.pdf>

⁵ Example: Tesla Solar, accessed 1/27/2021, SC jurisdiction return a system cost of \$16,400 for a 8.14kW system
and \$8,200 for a 4.08kW system. This results in a cost of \$2.01/W DC

⁶ Example: Energy Sage Annual Market Reports by State. <https://news.energysage.com/how-much-does-the-average-solar-panel-installation-cost-in-the-u-s/>, accessed 1/27/2021

1 in Docket No. 2019-182-E. For example, even at the national level SEIA reports
2 average prices of \$2.84/W for Residential and \$1.37/W for non-residential in Q3 of
3 2020, well outside the percentile band described by Barnes. Energy Sage reports
4 average solar prices in South Carolina to be \$3.00/W, and NREL reports 2018
5 national average prices (inflated to 2020 dollars) of \$2.8/W. This shows the
6 systematic bias in the LBNL data.

7
8 **Q. DO YOU AGREE WITH WITNESS BARNES THAT THERE ARE**
9 **ECONOMIES OF SCALE IN SOLAR PV PRICES?**

10 A. Yes, I do. By way of background, there can be economies of scale associated
11 with very large or very small solar PV systems that influence installation prices at
12 those size ranges. This can be true for small installation companies that are unable
13 to minimize the fixed costs associated with system design. Larger installers like
14 Tesla, Vivant, SunRun, and others typically offer uniform price estimates because
15 they are able to overcome these barriers. Since pricing models and pricing data often
16 aggregate data for different system sizes, it is standard industry practice to use a
17 single \$/W price across one for a single customer sector.

18
19 **Q. DID THE FRAMEWORK OF YOUR ANALYSIS ACCOUNT FOR**
20 **ECONOMIES OF SCALE IN SOLAR PV PRICES?**

21 A. Yes, it did. However, the solar PV prices that I used in my analysis are
22 designed to capture a range of system sizes, rather than a specific size, and are

relevant and appropriate for the purposes of this analysis. However, the prices I used in the forecast should not be used for extreme values such as systems under 1 kW, or over 12 kW.

Q. WITNESS BARNES SUGGESTS THAT THE “LOW COST” SCENARIO CONTAINS AN “UNLIKELY” INCREASE IN THE FEDERAL ITC, AND THUS SHOULD BE “ENTIRELY DISREGARDED.” DO YOU AGREE?

A. No, there are several reasons why the “Low Cost” scenario can provide valuable perspective about the future of solar adoption. Forecasts should be designed to capture a range of future possible values. The scenarios presented in my direct testimony were designed to reflect the significant policy uncertainty at a time when the U.S. was undergoing a national election. For this reason, I designed three scenarios—two of which (“Mid Cost” and “High Cost”) turned out to be more conservative than the policy track taken by the U.S. Congress. The “Low Cost” scenario contains a tax incentive assumption with 4% additional tax incentives (30% vs 26%) that ended up being approved by the Senate in the extension. This is hardly cause for entirely disregarding the scenario.

REBUTTAL TO WITNESS BEACH

Q. DO YOU AGREE WITH WITNESS BEACH THAT UNDER THE DESC SOLAR CHOICE TARIFF “THE ONLY RESIDENTIAL SOLAR SYSTEMS

1 THAT WOULD BE ECONOMIC ARE SMALL SYSTEMS 3 KW OR LESS
2 IN SIZE INSTALLED BY LARGE RESIDENTIAL CUSTOMERS?"

3 A. No. However, Witness Beach does not define "economic," so it is unclear
4 precisely what he means. I would define economic as having the opportunity for
5 savings over the lifetime of the system. The best way to represent this is through the
6 customer's all-in levelized bill ratio. Since this includes incentives, system costs,
7 O&M, payments for electric consumption, and electric bill savings over the lifetime
8 of the system, it is inclusive of the economic benefit and cost streams from the
9 customer's perspective. A bill ratio of less than one means that the customer is
10 saving money, relative to a counterfactual where they did not install. Bill ratios for
11 DESC Solar Choice Tariffs for Residential and Small Commercial are under 1.0 for
12 all forecast years and under all system size and cost scenarios examined. As I
13 mention in my direct testimony, there are other metrics that can be useful. One is
14 the Return on Investment (RoI). RoI for DESC Solar Choice Tariffs for Residential
15 and Small Commercial are greater than 0 for all forecast years and under all system
16 size and cost scenarios examined. Unlike investments in stock or bond markets, this
17 RoI is not volatile and nearly guaranteed. Finally, though it is a flawed metric that
18 does not account for the time value of money, the simple payback period is
19 sometimes used by customers as a rough estimate for system economics. If a simple
20 payback is less than the system life it suggests that the economics are favorable.
21 Simple payback for DESC Solar Choice Tariffs for Residential and Small

1 Commercial are less than 20 years for all forecast years and under all system size
2 and cost scenarios examined.

3 Since all three of the economic metrics are in agreement, there is no evidence
4 to support Witness Beach's claim.

5
6 **Q. DO YOU AGREE WITH WITNESS BEACH THAT THE SOLAR CHOICE**
7 **TARIFFS WOULD "ENCOURAGE WEALTHY AND/OR WASTEFUL**
8 **CUSTOMERS TO GAME THE UTILITY'S SOLAR PROGRAM?"**

9 A. There is no evidence in the record to support this claim. Supporting this claim
10 would require customer segmentation of load profiles into bins on adjusted income
11 and appliance end use efficiency. Witness Beach to date has not filed any supporting
12 analysis in this docket. DESC's rate incentivizes Solar Choice customers to
13 optimize their system size to use more of the electricity generated by their system
14 behind the meter, rather than exporting to the grid and potentially increasing the cost
15 shift.

16
17 **Q. DO YOU AGREE WITH WITNESS BEACH'S STATEMENT ON PAGE 11**
18 **THAT "SECTION 58-40-20(G)(2) OF ACT 62 SPECIFIES THAT THE NEW**
19 **SOLAR CHOICE TARIFFS SHOULD "PERMIT SOLAR CHOICE**
20 **CUSTOMER GENERATORS TO USE CUSTOMER GENERATED**
21 **ENERGY BEHIND THE METER WITHOUT PENALTY?"**

1 A. Yes. However, Witness Beach suggests that the Solar Choice Tariffs are
2 inconsistent with this requirement of Act 62, using the total *energy* generated by a
3 solar PV system, with an example from energy efficiency technologies. This
4 example displays a fundamental misunderstanding of the differences between
5 energy generation and energy reduction. A solar PV system is not always generating
6 energy. Unlike a more efficient appliance, a solar PV system may not be generating
7 energy at any given moment. If the system is not generating energy, it is not
8 reducing a customer's load, regardless of the total energy it generates over a period
9 of time. Allowing the customer to use their own energy behind the meter without
10 penalty means compensating them at retail rates when the customer is actively using
11 their solar power, and their load is reduced. This does not mean that they should be
12 guaranteed an inflated payment stream for extra energy they generate that is
13 exported, and thus by definition is *not consumed behind the meter*.

14
15 **Q. WITNESS BEACH STATES THAT A 7-KW AC SYSTEM WOULD HAVE**
16 **A PAYBACK PERIOD OF OVER 20 YEARS UNDER DESC'S SOLAR**
17 **CHOICE RATE. IS THIS CORRECT?**

18 A. I did not analyze a 7 kW AC system as a part of my analysis. However, I did
19 analyze a slightly smaller 7.2 kW DC system, which is equivalent to a 5.7 kW AC
20 system. The result of this analysis still reflects a 15-year payback period.
21 Specifically, my analysis shows that in 2021 in the "Mid-Cost" scenario for this

1 system results in \$769 of first year bill savings, a 15 year payback, a 5.5% Return
2 on Investment, and a levelized bill ratio of 0.57.

3
4 **REBUTTAL TO WITNESS ZIMMERMAN**

5 **Q. DO YOU AGREE WITH WITNESS ZIMMERMAN'S**
6 **CHARACTERIZATION OF PAYBACK PERIOD VERSUS ROI ON PAGE**
7 **8, LINES 9 THROUGH 16, OF HIS DIRECT TESTIMONY?**

8 A. No. Witness Zimmerman does not provide any evidence to support his
9 emphasis on the payback period, and he confusingly conflates RoI, payback, and
10 NEM. As stated in my direct testimony, simple payback is only relevant for cash
11 purchased systems. This calculation takes all cash flows associated with the system
12 purchase, including the upfront equipment and installation costs, annual incentive
13 payments, operation and maintenance costs, and customer bill savings, and sums all
14 debits and credits. The payback time is the number of years it takes for the total
15 debits to equal the total credits—the first year that an investment generates positive
16 *cash flow*. It is not a good way to compare investments, does not account for time
17 value of money, and is typically only used to estimate future liquidity. Most
18 importantly it cannot be used to compare investments with any financing—which
19 includes things like leases, loans, power purchase agreements, etc.

20 RoI is the discount rate at which the Net Present Value (NPV) of all the cash
21 flows associated with an investment is zero. Businesses use RoI as the primary
22 metric to compare investments because it can account for the time value of money,

1 the lifetime of the investment, and all future cash flows regardless of financing
2 mechanism. It can be used to compare investments with blocks of future O&M, such
3 as the replacement of an inverter.

4 For Small Commercial and Residential customers, under all System Size and
5 Cost scenarios I examined, and for all forecast years through 2030, there is a positive
6 RoI. For Small Commercial, the RoI's range from 5% ("High Cost", "Size 3",
7 installation date in 2022) to 26% ("Low Cost", "Size 1", installation date in 2030).

8 In pages 8-9, in lines 21-22 and 1-3, Witness Zimmerman suggests that a
9 payback lower than eight years requires 1:1 net metering (paying customers the
10 retail rate for energy not used behind the meter). This is simply incorrect. My
11 modeling demonstrates that a Small Commercial sector customer in DESC territory
12 installing a 12.5 kW DC system can achieve on average a 6.9 year payback and 16%
13 RoI in 2021 in the "Mid Cost" scenario under the Solar Choice Tariffs, which does
14 not include 1:1 net metering. As I point out in my direct testimony, this calculation
15 includes multiple conservative assumptions which likely lead to a payback estimate
16 longer than what the typical customer will actually experience.

17
18 **Q. PLEASE RESPOND TO WITNESS ZIMMERMAN'S ALLEGATION ON**
19 **PAGE 9, LINES 11 THROUGH 12, OF HIS DIRECT TESTIMONY THAT**
20 **GROWTH OF ROOFTOP SOLAR IN THE C&I SEGMENT IS**
21 **DEPENDENT UPON TARIFFS WITH 1:1 BILL CREDITS AND ANNUAL**
22 **NETTING.**

1 A. This is a mischaracterization because, although the factors that Witness
2 Zimmerman points out can influence the economics of Solar PV—which in turn can
3 influence adoption—this is only so when all other factors are held constant. To
4 simplify customer diffusion theory, there are three critical components that lead to
5 growth in any customer segment. The first is the objective customer economics of
6 the technology, represented by the RoI or the bill ratio. The second is the customer's
7 willingness to adopt solar at a given RoI or all-in bill ratio. Together, these
8 determine the long-run market potential, which accounts for the number of
9 customers that could adopt the technology if desired, and their willingness to do so
10 at a given return. If customers are skeptical of a technology or there are significant
11 non-economic barriers, the long-run market potential might be very small, even with
12 very high RoI. The final component is customer awareness of a technology—
13 meaning their ability to make an informed economic decision given the information
14 they have about the technology. The diffusion of this information drives adoption
15 toward the long-run market share.

16 Tariffs with 1:1 bill credits and annual netting are one form of incentive that
17 increase customer economics for systems large enough to have a significant portion
18 of the energy generated by the system exported to the grid, rather than consumed
19 behind-the-meter. Smaller systems better aligned with customer demand are less
20 affected by netting periods because they do not depend on retail export
21 compensation to make the system economic.

1 Historical installation data in DESC territory demonstrate that the stock of
2 C&I customers willing to adopt Solar PV in DESC territory is limited. The high RoI
3 of approximately 20% suggests that this is indicative of non-economic factors, such
4 as low customer preference.

5
6 **Q. ON PAGE 12, LINE 8, OF HIS DIRECT TESTIMONY, WITNESS**
7 **ZIMMERMAN NOTES THAT THE SOLAR CHOICE TARIFFS WILL**
8 **“EFFECTIVELY DESTROY THE ROI AND PAYBACK PERIOD” FOR**
9 **C&I CUSTOMERS. WHAT DOES YOUR ANALYSIS REVEAL ON THIS**
10 **POINT?**

11 A. This claim is baseless and exaggerated. Witness Zimmerman does not
12 provide any evidence or analysis supporting this speculative claim. My analysis
13 shows that for all system size scenarios, cost scenarios, and forecast years, Small
14 Commercial sector customers will have payback periods much lower than the
15 lifetime of the system (4.9 years to 13.3 years), and RoI between 5% and 26%.
16 Essentially, the Solar Choice Tariffs not only align with the cost-based principles of
17 Act 62, but they also accomplish another key tenet of Act 62 by providing a payback
18 period that ensures the growing market for distributed energy generation in South
19 Carolina is not disrupted.

20
21 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

22 A. Yes, it does.